Advantys STB Configuration Software 3.0 Quick Start Guide

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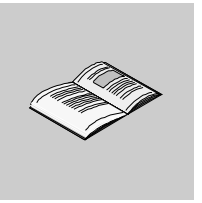

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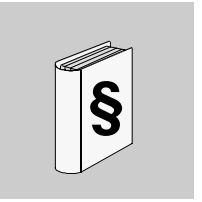
Safety Information



Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation, which, if not avoided, **will result** in death or serious injury.

⚠ WARNING

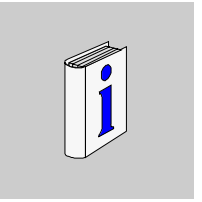
WARNING indicates a potentially hazardous situation, which, if not avoided, **can result** in death, serious injury, or equipment damage.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, **can result** in injury or equipment damage.

PLEASE NOTE Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

About the Book



At a Glance

Document Scope

This document provides basic information and instructions for getting the Advantys STB Configuration Software set up and operating.

Validity Note

The data and illustrations found in this book are not binding. We reserve the right to modify our products in line with our policy of continuous product development. The information in this document is subject to change without notice and should not be construed as a commitment by Schneider Electric.

Related Documents

Title of Documentation	Reference Number
Advantys STB System Planning and Installation Guide	890USE17100
Advantys STB System Hardware Components Reference Guide	890USE17200
Advantys STB Profibus DP Network Interface Applications Guide	890USE17300
Advantys STB INTERBUS Network Interface Applications Guide	890USE17400
Advantys STB DeviceNet Network Interface Applications Guide	890USE17500
Advantys STB CANopen Network Interface Applications Guide	890USE17600
Advantys STB Ethernet TCP/IP Modbus Network Interface Applications Guide	890USE17700
Advantys STB Modbus Plus Network Interface Applications Guide	890USE17800
Advantys STB Fipio Network Interface Applications Guide	890USE17900
Advantys STB Reflex Actions Reference Guide	890USE18300

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Product Related Warnings

Schneider Electric assumes no responsibility for any errors that may appear in this document. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When controllers are used for applications with technical safety requirements, please follow the relevant instructions.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this product related warning can result in injury or equipment damage.

User Comments

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Hardware and Software Requirements

1

Introduction

Overview

The Advantys configuration software is designed to run on various Microsoft Windows-based operating systems. This chapter describes your computer system requirements. It also provides instructions for installing and uninstalling the software.

What's in this Chapter?

This chapter contains the following topics:

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System Requirements

Hardware Requirements

Your PC needs to meet the following hardware requirements to run the Advantys configuration software:

Requirement	Minimum	Recommended
Computer	Pentium III or equivalent	
RAM	128 MB	256 MB
Free Hard Drive Space on System Drive	200 MB	
Free Hard Drive Space on Installation Drive	100 MB for a minimal installation without optional language modules + 20 MB for each installed language module	
Swap File	256 MB	512 MB
Monitor Display	256 color SVGA 800 x 600 resolution	True color XGA 1024 x 768 resolution

A CD-ROM drive is the required installation medium.

Software Requirements

The Advantys configuration software requires 1 of the following software operating systems:

Operating System	Edition/Service Pack	Special Considerations
Microsoft Windows 98	second edition (SE)	For Windows 98 (SE), we recommend that you limit physical memory size to a maximum of 256 MB and set up contiguous permanent swap files.
Windows NT 4.0	service package 6a or later	For Windows NT, Windows 2000 or Windows XP Porfessional, you need administrator access rights to install the Advantys configuration software and Power User rights to run the software.
Windows 2000	service package 3 or later	
Windows XP Professional	-	

The browser needs to be Microsoft Internet Explorer 5.01 or later.

Connection to a Physical Island

The Advantys configuration software runs on a PC that connects to the CFG port on the network interface module (NIM) of the physical Advantys island.

You need a cable to make the connection. Schneider Electric offers 2 different cables for the connection.

The following table lists the references for the cables:

Cable	References
Serial	2 m (6.2 ft) STB XCA 4002 programming cable It is delivered with the software.
USB	SR2 CBL 06 USB to serial (D-Sub 9) connector cable You must use this cable if your computer has no serial (D-Sub 9) connector. This cable provides an USB to serial (D-Sub 9) connector. Additionally, you must use the STB XCA 4002 programming cable which is part of the Advantys Configuration software.

For more information about the required hardware connections, refer to the *Advantys STB System Planning and Installation Guide* or the CFG port discussion in your *Advantys STB NIM Applications Guide*.

Compatibility and Limitations

Introduction

The following overview gives you information about the compatibility with non-Advantys products and the limitations of older Advantys versions.

Compatibility List

The following list specifies the compatibility with other software products.

The output files created by the Advantys configuration software allow to interact with the following programming and network configuration products:

Software	Version	Description
Twido Suite	2.x or higher	for FTB, FTM, and OTB islands via exported island description files in CANopen EDS or DCF format
SyCon	2.8 or higher	via exported island description files in CANopen EDS, DCF, and DDXML formats
Unity Pro	2.x	via exported symbol description files in XSY format
Unity Pro	3.x or higher	via command line interface and exported files in DCF and DDXML formats
PL7	4.2 or higher	via exported symbol description files in SCY format
Concept	2.5 or higher	via exported section description files in TXT format

Limitations of Advantys

A configuration including a V3.x CANopen network interface module (NIM) cannot be downloaded into a V2.x NIM or a V1.x NIM.

Installing and Removing the Advantys Software

Before You Start

Note: Before you install the Advantys configuration software, close all Windows applications and deactivate any virus-protection software.

Installation

To install the Advantys configuration software, perform the following steps:

Step	Action	Result
1	Insert the Advantys CD in your PC's CD-ROM drive.	If the **Autorun** function is activated, the installation will start automatically.
2	If the Microsoft .NET Framework is not installed on your computer system, you will be prompted to install it.	The Microsoft .NET Framework **Installation Wizard** screen appears.
3	If the installation does not start automatically, double-click *CD-Rom drive: \start.exe*.	The **Language Selection** screen appears.
4	Choose a language and click **Next**.	The **Action Selection** screen appears.
5	Select the action you want to perform. Select **Install Advantys Configuration Software** to install the software.	The **Installation Wizard** screen appears.
6	Enter **Next** to start the installation.	The **License Agreement** screen appears.
7	Accept the license agreement and enter **Next**.	The **Readme Information** screen appears.
8	Enter **Next** to continue the installation.	The **Catalog Selection** screen appears.
9	Select the catalog(s) and enter **Next** to continue.	The **User Information** screen appears.
10	Enter your user information and the following application settings. Enter **Next** to continue the installation.	The **Destination Folder** screen appears.
11	Browse the destination folder or use the standard folder. Enter **Next** to continue the installation.	The **Select Installation Type** screen appears.

Step	Action	Result
12	Select the type of installation you want to use. Please select **Typical** for a standard installation. Enter **Next** to continue the installation.	The last screen appears.
13	Enter **Finish** to start the installation of the Advantys Configuration Software on your computer.	The installation status appears.
14	To register the software, click **Yes**. To run the software without registering it, click **No**.	An unregistered software package will run for 21 days, then stop running.
15	Follow the remaining on-screen instructions.	Once the software has been installed, an icon appears on your desktop, which you can double-click to start the software: 

Microsoft .NET Framework 1.1

The Microsoft .NET Framework must be installed before you can install the Advantys configuration software. If the Microsoft .NET Framework is not installed on your computer system, you will be prompted to install it during the installation of the Advantys configuration software.

The Microsoft .NET Framework 1.1 is part of the Advantys configuration software installation CD-ROM.

Removal

To remove the Advantys configuration software from your computer, choose **Start** → **Settings** → **Control Panel** → **Add/Remove Programs**.

Note: The Microsoft .NET Framework 1.1 is not automatically removed together with the Advantys configuration software.

Configuration Software Overview

2

Introduction

Overview

This chapter provides an overview of the basic components of the Advantys configuration software.

What's in this Chapter?

This chapter contains the following topics:

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Introduction

Overview

The Advantys configuration software supports the Advantys STB distributed I/O system, an open, modular system designed for the machine industry, with a migration path to the process industry.

The software is an optional feature of the system that can be used for the following activities:

- creating, modifying, and saving the configuration descriptions of all the physical devices on an island
  These tasks are performed mainly in offline mode, although some modifications may be done online.
- monitoring island performance, adjusting data values, and building a binary file describing the island configuration

Configuration Check

The Advantys configuration software checks for correctness (numeric limitations on modules and I/O points, compatibility between power supply modules and I/O modules, and so on.) whenever possible during the editing process. Otherwise, these checks are made when a complete project build is performed.

The software provides features that help you plan

- logic and field power consumption
- I/O image area consumption

Editors

The table below describes the software features of the 3 main editors:

Editor	Software Features
Island Editor	provides a graphical display of the island segments and the order in which the modules are installed
Module Editor	allows you to customize the operating parameters of the individual I/O modules
Reflex Editor	allows you to program reflex actions and map their results to individual output modules on the island

Software Outputs

A list of the modules available for your island configuration is displayed in the Catalog Browser of the Advantys configuration software. Use this browser to select and install modules in the Island Editor.

The configuration software provides 3 major outputs:

- a device description file
  (You may generate this device description file in several formats depending on the intended use and the field bus format.)
- a binary image of the configuration suitable for loading into the Island
- printout of project documentation

Starting the Advantys Configuration Software

In the Windows Environment

Launch the Advantys configuration software in the Windows environment as follows:

Step	Action
1	Click the **Start** button.
2	From the **Programs** option, select **Schneider Electric**, followed by **Advantys**, and, once again, by **Advantys**.
3	From the popup window, select the type of physical island you want to configure.
4	Select the language you want to use.
5	Click **OK**.

From the Command Line

Start the Advantys configuration software from a command line editor as follows:

Step	Action
1	Open the command line editor.
2	When the command prompt appears, type `advantys.exe-w`. For example: *C:\Program Files\Schneider Electric\Advantys\Advantys.exe"*`-w`*"C:\Program Files\Schneider Electric\Advantys\projects\test\test.aiw"* **Note:** To open the Advantys configuration software with the previous workspace as if in Windows, omit the `-w`.
3	Press ENTER.
4	From the popup window, select the type of physical island you want to configure.
5	Select the language you want to use.
6	Click **OK**.

If you enter a wrong argument as a command parameter, a warning message will be displayed, suggesting valid arguments.

What Is an Island?

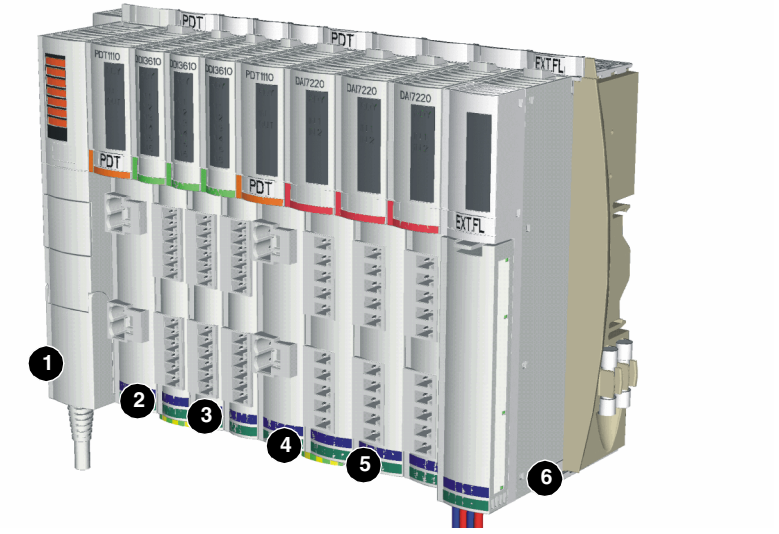
Overview

In the Advantys configuration software, a distinction is drawn between a *physical island* in the real world of your application and a *logical island* in the context of the software.

Physical Island

An island is an assembly of distributed I/O, power distribution and island bus communication/extension modules that function together as 1 node on a fieldbus. An island contains up to 32 I/O modules plus a NIM, 1 or more power distribution modules PDMs, and optionally some modules that let you extend the bus to multiple segments (or rails) of Advantys STB I/O, to Advantys STB preferred modules, and to standard CANopen devices.

The following illustration shows an example of a segment on a physical island:



1 NIM
2 PDM
3 Voltage Group of I/O Modules
4 Second PDM Supporting the Second Group of I/O Modules (5)
5 Second Group of I/O Modules, Requiring a Different Field Power Voltage or Additional Current
6 EOS Module for Extending the Physical Island to Another Segment of Advantys I/O Modules or to a Preferred Module

Logical Island

The Advantys configuration software lets you model a physical island so that it can be tested against our design rules and customized to meet your application requirements. The software model is called *logical island* .

The logical island is a file in the software program with a *.isl* extension. It contains a description of the physical island – all the modules on the island and all the operating parameters associated with each module that may be defined in the software.

As you develop a logical island, the software will provide warnings about any mistakes you have made in the model, and usually it will prevent you from creating an invalid configuration. For example, it prevents you from placing a DC module in a location where it would receive AC field power (and vice versa).

Workspace

Overview

The workspace is a project environment in the Advantys configuration software. The workspace is where you design a logical island configuration. Within the workspace, you can create a new configuration and download it to the physical island. You can also upload configuration data from a physical island to a logical island in the workspace .

A workspace is saved as a file with an *.aiw* extension.

Relationship of the Workspace to an Island

1 or more logical islands, up to a maximum of 10, can be created and managed in a workspace. The configuration data associated with each island is stored in its own *.isl* file in the workspace.

Customizing Your Workspace

You can customize your workspace settings by selecting **Settings** from the **Options** menu.

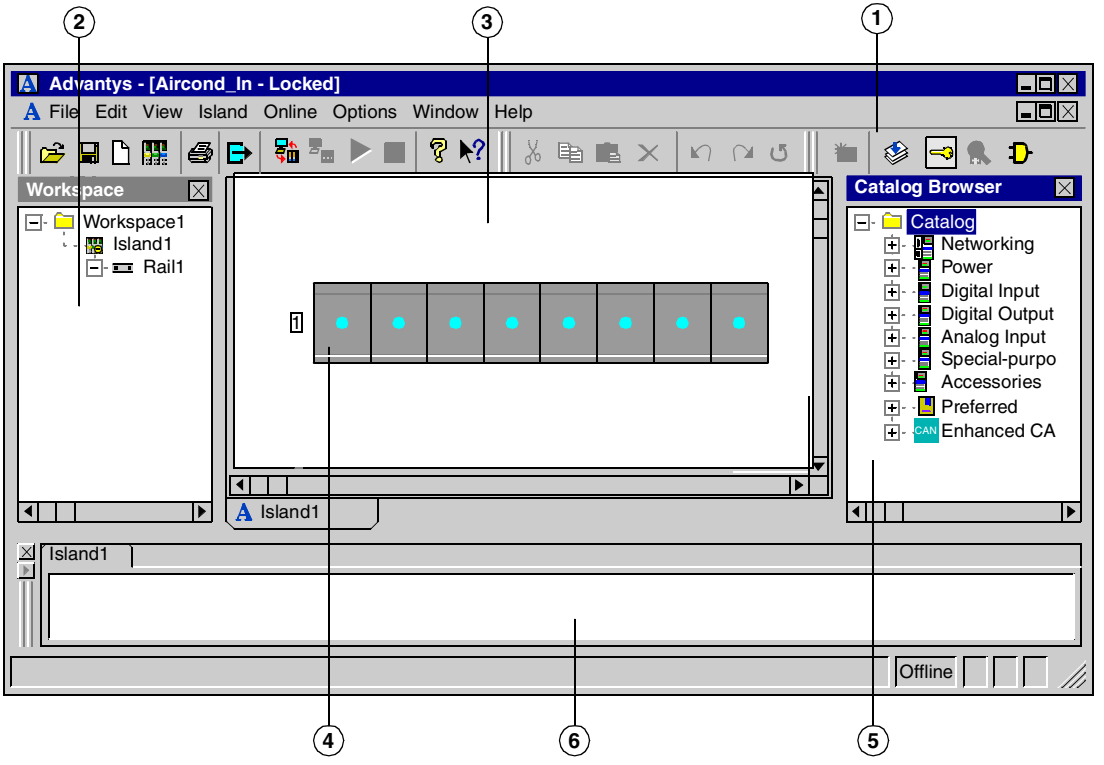
These settings include the following features:

- interface language (**English, French, German, Spanish or Italian**)
- foreground and background colors
- default directory path

If you have more than 1 workspace on your computer, you can define different settings for different workspaces.

Workspace Screen

A **Workspace** screen consists of the following areas:



1 Toolbars
2 Workspace Browser
3 Island Editor
4 DIN Rail
5 Catalog Browser
6 Log Window

These areas may be hidden, enlarged, reduced, moved or docked on the **Workspace** screen. If you modify the layout of a **Workspace** screen, the layout definition will be saved. Each time you reopen that workspace, the screen appears with the layout you used the last time you saved the workspace.

The figure above shows the default locations of each of the 6 workspace areas. The functions of these areas will be described in more detail in the following pages.

Island Segments

Primary Segment

Each island must include at least 1 segment, called the primary segment. The primary segment is always the first segment in the island configuration. It is where the network interface module (NIM) resides.

Modules in the Primary Segment

The NIM is always located in the first (leftmost) slot of the primary segment. The power supply built into the NIM converts 24 VDC into a 5 V logic power signal that supports all other modules in the primary segment.

The NIM is immediately followed by a power distribution module (PDM), which will distribute field power to the input and output modules on your island. Depending on the type of I/O modules in the segment, you will use an STB PDT 310x PDM (to distribute 24 VDC), an STB PDT 210x PDM (to distribute 115 or 230 VAC) or some combination of the 2 PDM types.

The power supply in the NIM supports 1.2 A of current to be drawn by the I/O modules in the segments.

Auxiliary Power Supply

The STB CPS 2111 auxiliary power supply provides 5 VDC logic power to the modules installed to its right in an Advantys STB island segment. It works together with the NIM (in the primary segment) or with a BOS module (in an extension segment) to provide logic power when the I/O modules in the segment draw current in excess of 1.2 A.

The module converts 24 VDC from an external power source to an isolated 5 VDC of logic power, providing up to 1.2 A of current to the modules on its right.

Last Device in a Primary Segment

Each Advantys system must be terminated at the last module. If the island comprises only the primary segment, use the STB XMP 1100 termination plate as the last module in this segment. If the island is extended to either another segment of Advantys STB modules or to a preferred module, do not use the termination plate at the end of the primary segment.

Depending on your requirements, you can choose 1 of the following methods to terminate a primary segment:

If...	Then...
the island bus comprises just 1 segment with no extensions	terminate the primary segment with an STB XMP 1100 termination plate.
the island bus is extended to another segment of Advantys STB I/O modules	install an STB XBA 2400 base to hold an STB XBE 1000 EOS module at the end of the segment. Do not use a termination plate in the primary segment.
the island is extended to a preferred module	install an STB XBA 2400 base to hold an STB XBE 1000 EOS module at the end of the segment.
the island is extended to an enhanced or a standard CANopen device	install an STB XBA 2000 base to hold an STB XBE 2100 CANopen extension module at the end of the segment, followed by a STB XMP 1100 termination plate.

Island Bus Extensions

You might want to extend your island configuration beyond the primary segment for the following reasons:

- You might want to position the I/O modules as close as possible to the sensors and actuators they control.
- You might want to extend the island bus to devices other than Advantys STB I/O modules (preferred modules and/or enhanced CANopen devices and/or standard CANopen devices).

Extending the Island to Extension Segments of STB I/O Modules

When you extend the island bus to additional segments of STB I/O, these segments are called extension segments. An island bus may support up to 6 extension segments of STB I/O modules. Extension segments must be preceded by 1 primary segment.

The first (leftmost) module in each extension segment is an STB XBE 1200 beginning-of-segment (BOS) module. It is followed by a PDM and 1 or more STB I/O modules. The BOS has a built-in power supply like the one used in the NIM. It provides 1.2 A of current to support the STB I/O modules in its extension segment. Auxiliary power supply can provide additional logic current if necessary.

The BOS is connected to the previous segment (or to a preferred module) by an island bus extension cable. The cable and the BOS module extend the island's communication bus and auto-addressing line to the new segment.

Just as with the primary segment, the last device in an extension segment may be either

- an STB XMP 1100 termination plate, if this is the last segment of the island,
- an STB XBE 1000 EOS module, if it is immediately followed by another extension segment or a preferred module, or
- an STB XBE 2100 CANopen extension module, if it is immediately followed by a STB SMP 1100 termination plate.

In the Advantys configuration software, each segment is shown on a separate DIN rail. In a real physical installation, more than 1 segment may be placed on the same DIN rail.

Extending the Island to Preferred Modules

You may also extend the island bus to 1 or more preferred modules. In most respects, the island bus handles them just as other STB I/O modules. There are, however, 2 key differences:

- A preferred module is not designed in the Advantys STB form factor and does not fit into 1 of the standard base units. It therefore does not reside in a segment.
- It may require its own power supply.

A preferred module must have an input connection to receive an island bus extension cable from the upstream island module. It is designed with an extension cable output connection that allows it to send island bus signals to a downstream module or segment. It also has the ability to terminate the island bus if it is the island's last module.

An island can support a maximum of 31 preferred modules. (The primary segment must include at least 1 Advantys STB I/O module.) You may use island bus extension cables to daisy-chain multiple preferred modules together.

Extending the Island to Enhanced or Standard CANopen Modules

You may also extend the island bus to 1 or more CANopen devices. The island bus supports up to 12 CANopen devices. This type of bus extension requires a special STB XBE 2100 CANopen extension module as the last module of the segment preceding the first CANopen device.

CANopen devices must always be the last devices on the island bus.

CANopen devices must be addressed manually, usually via a set of address switches built onto the devices. The baud rate must be set to 500 kBaud. Via the **Properties** table, the Module Editor for the NIM also allows you to set up the maximum node ID value to be used on a CANopen extension. Any manually set address switch must match the automatically assigned node ID. The address assignment for the CANopen modules starts with this value, counting downwards to avoid any overlap with addresses automatically assigned to the Advantys STB modules. The default value is 32; however, it may be modified in order to enforce the use of lower node IDs for CANopen devices. Indeed, some of these devices may have a restricted configurable address range.

Whenever a standard CANopen device is part of the island bus, the bus must be configured to operate at 500 kBaud. The default baud rate is 800 kBaud, so you must change it using the Advantys configuration software. To change the baud rate, select from the **Island** menu.

When you are using standard CANopen devices, do not push the RST button on the NIM. The RST button will cause the baud rate to be set to 800 kBaud, and the island bus will not operate properly.

Maximum Length of the Island Bus

The total length of the island bus, from the NIM to the last device, must not exceed 15 m (49.2 ft). This length includes both the sum of the lengths of all bus extension cables and CANopen cables connecting devices as well as the widths of the hardware modules themselves.

Creating a Project with the Advantys Configuration Software

Overview

The Advantys configuration software provides a set of Windows-based tools that enable you to plan, model, customize, and test island bus designs and to download custom configurations to physical islands.

Advantages of Using the Software

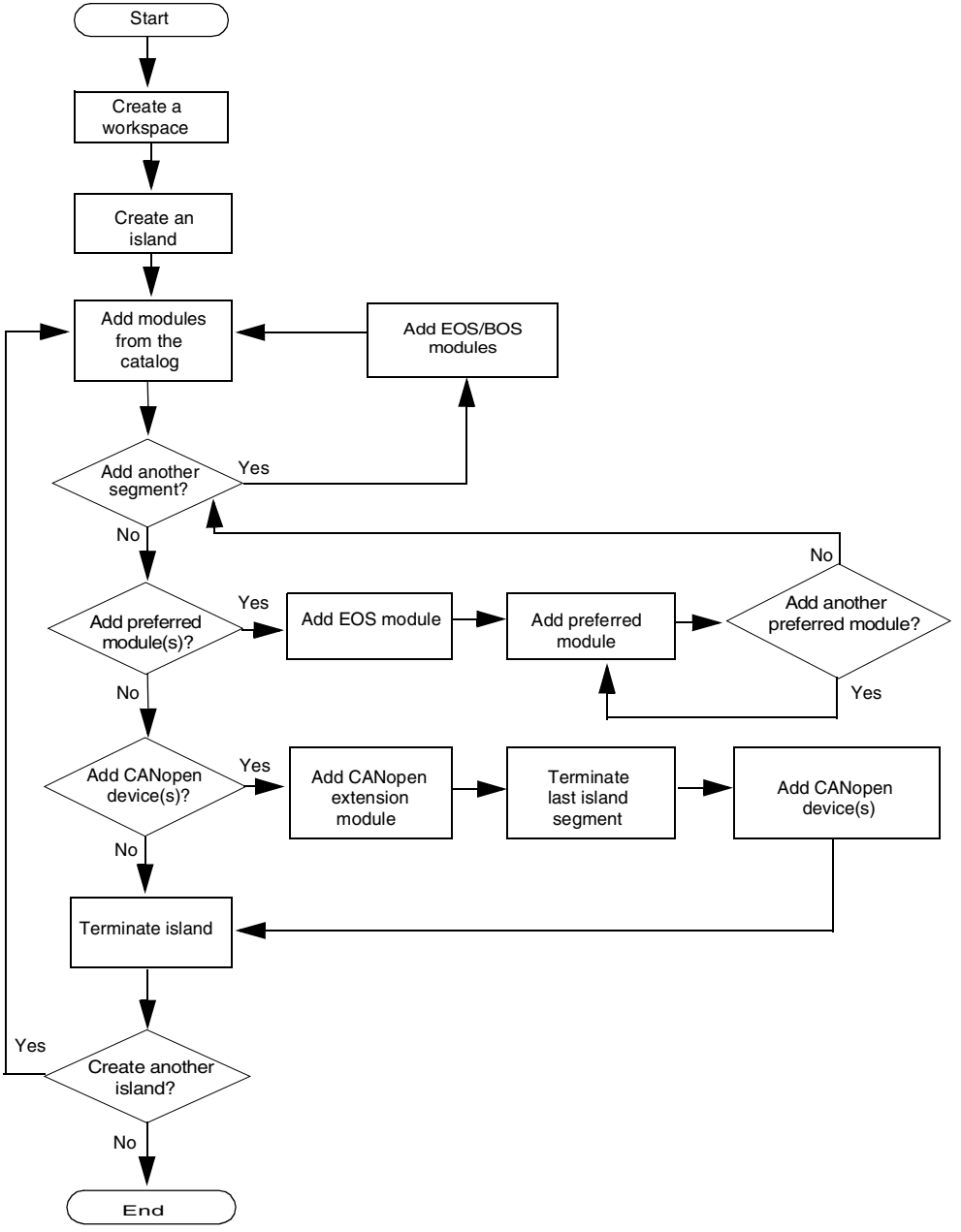
All the Advantys STB I/O modules have factory-default parameter settings that allow them to be operational directly out of the box. If you want to customize your island's operational capabilities, however, you need to use the Advantys configuration software.

The software allows you to

- customize the operating parameters of the I/O modules,
- create and implement reflex actions,
- optimize island performance by assigning priority to certain modules,
- designate certain application-critical modules as mandatory,
- add preferred modules and/or standard CANopen devices to the island configuration,
- validate that your island configuration adheres to Advantys STB design guidelines.

Project Work Flow

The flowchart describes the work flow associated with a valid island configuration:



Creating an Island Bus Configuration

3

Introduction

Overview

This chapter describes how a logical island configuration can be created in an active Workspace.

What's in this Chapter?

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Creating a Workspace

Overview

Before you can create a *.isl* file for a logical Island, you need to open an existing Workspace or create a new one. In the Advantys configuration software, an Island can exist only inside a Workspace.

The first time you start the configuration software, you must first create a Workspace. When you create the Workspace, a new Island will be created inside the Island. You can add additional islands to the Workspace. A Workspace can contain up to 10 Islands.

Creating a Workspace

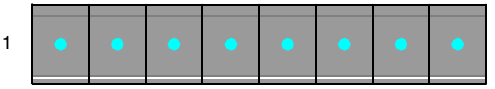
Create a new Workspace as follows:

Step	Action	Result
1	On the **File** menu, select a **New Workspace**.	The **New Workspace** dialog box appears.
2	In the **Workspace File** field of the dialog box, enter a name for the Workspace.	A Workspace name can be up to 50 characters long and can comprise alphanumerics plus space, "_" and "-" keyboard characters.
3	In the **Island File** field of the dialog box, enter a name for the Island.	An Island file name can be up to 50 characters long and can comprise alpha-numerics, spaces and other keyboard characters.
4	Click **OK**.	A new Workspace screen appears showing the new Island. All that appears in the Island Editor as an empty DIN rail.

Rails

Overview

An empty rail appears in the Island Editor as soon as a new Island has been created:



This rail will support the Advantys STB Modules in the primary Segment of the new Island bus configuration. All the Modules in the primary Segment of the Island (the NIM, PDMs, AUX power supply, I/O Modules, extension Modules or termination plate) will be inserted on this default rail.

Deleting and Adding the Primary Rail

If you delete the primary rail from the Island Editor and then want to replace it, use the **Add Rail** command from the **Island** menu. You must have the primary rail to configure a logical Island.

Adding More Rails

Each Segment in a logical Island appears on its own rail. The maximum number of rails in an Island configuration is 7, 1 for the primary Segment and up to 6 for extension segments.

In the Advantys configuration software, a Segment is referred to as a **Rail**.

Preferred Modules (see *Extending the Configuration to a Preferred Module, p. 36*) and CANopen devices (see *Extending the Configuration to Standard CANopen Devices, p. 37*) do not appear on separate rails in the Island Editor. They appear beside or below the rail from which they are extended.

Adding Modules to an Island Segment

Overview

There are 3 ways to add Modules to a rail:

- using the drag-and-drop function
- double-clicking the module
- selecting the module and pressing ENTER

If you try to add a module on the rail in an invalid location, a warning message appears and the software does not allow the module to be dropped in that location.

Drag-and-Drop Method

Proceed as follows to add a module to a rail using the drag-and-drop function:

Step	Action	Result
1	Select the module name in the Catalog Browser .	The module name is highlighted.
2	Drag the module to the desired location on the rail in the Island Editor.	As the module is dragged across the Workspace, the following icon is displayed:  When the module crosses over the rail, 1 of the following icons appear: •  indicates a valid position •  indicates an invalid position
3	Release the mouse button on a valid location.	A graphical version of the module drops in the location on the rail.

Double-Click Method

The double-click method is usually the quickest way to add a module to the configuration:

- If you want to add a module to the end of the last rail, simply double-click the module name in the Catalog Browser . Subsequently, a graphical version of the module will appear at the end of the rail.
- If you want to place a module between 2 Modules that are already on the Island, select the leftmost of the 2 existing Modules in the Island Editor, and then double-click the new module name in the Catalog Browser. Subsequently, a graphical version of the new module will appear between the 2 existing Modules on the rail.

ENTER Key Method

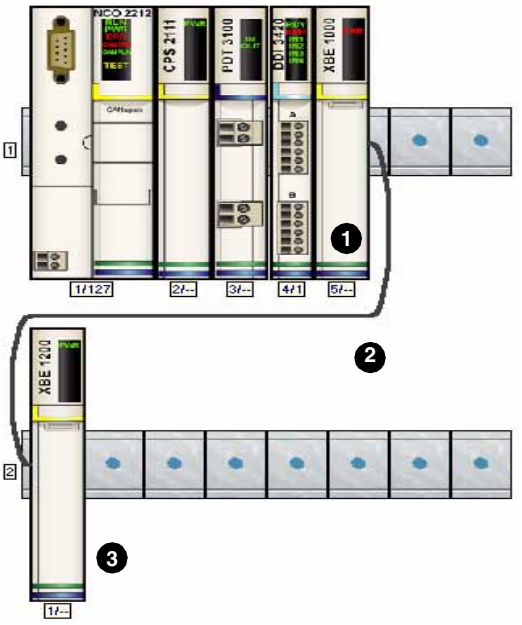
The ENTER key method is similar to the double-click method:

- If you want to add a module to the end of the last rail, single-click the module name in the Catalog Browser , and then press ENTER. A graphical version of the module appears at the end of the rail.
- If you want to place a module between 2 Modules that are already on the Island, select the leftmost of the 2 existing Modules in the Island Editor, and then select the new module name in the Catalog Browser and press ENTER. Subsequently, a graphical version of the new module will appear between the 2 existing Modules on the rail.

Adding Extension Rails to the Island Configuration

Procedure

To extend the Island configuration over longer distances by adding extension rails, proceed as follows:

Step	Action
1	If there is a terminator plate at the end of the last existing rail, remove it. Also remove the XBE2100 module, if there is one, and the modules attached to it.
2	Pick an EOS module from the Catalog Browser and drop it in the Island Editor at the end of the last rail.
3	Double-click a BOS module in the Catalog Browser. **Result:** A new rail will appear in the Island Editor below the existing one. The BOS module is the first module on the new rail. An extension cable connects the EOS module and the BOS module:  **1** EOS Module **2** Extension Cable **3** BOS Module
4	Pick a PDM from the Catalog Browser and drop it in the Island Editor next to the BOS module. Add auxiliary power supplies if necessary.
5	Pick the appropriate I/O modules from the Catalog Browser and drop them in voltage group(s) after PDM(s).

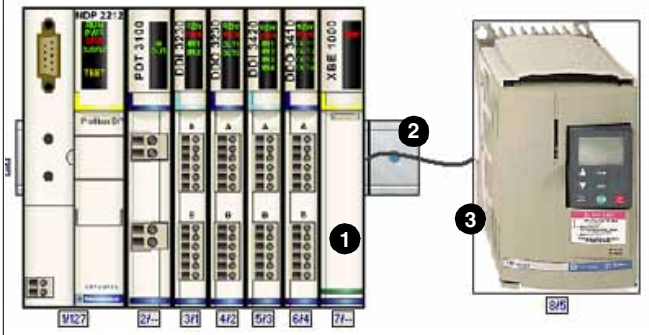
Step	Action
6	Pick either a terminator plate or another extension module (either an EOS or a CANopen extension module) and drop it at the end of the new rail.

Note: An Island can support up to 7 rails. The primary is mandatory, and up to 6 extension rails are optional.

Extending the Configuration to a Preferred Module

Procedure

Proceed as follow to extend an Island configuration from a rail to a preferred module:

Step	Action
1	If there is a terminator plate at the end of the last existing rail in the Island Editor, remove it.
2	Pick an EOS module from the Catalog Browser and drop it in the Island Editor at the end of the rail.
3	Double-click a preferred module in the Catalog Browser. **Result:** The preferred module appears in the Island Editor beside the rail. An extension cable connects the EOS module and the preferred module:  **1** EOS Module **2** Extension Cable **3** Preferred Module
4	If you want to add another preferred module, repeat step 3. **Result:** Each additional module is placed to the right of the previous module, with a cable connection between them. If you want to extend to a new Advantys I/O rail, go to step 5. If you want the preferred module to be the last module on the Island, go to step 6.
5	Double-click a BOS module in the Catalog Browser. **Result:** A new rail will appear below the existing one. The BOS module is the first module on the new rail. An extension cable connects the preferred module and BOS module (see *Adding Extension Rails to the Island Configuration, p. 34*).
6	Apply 120 Ω termination to the physical preferred module.

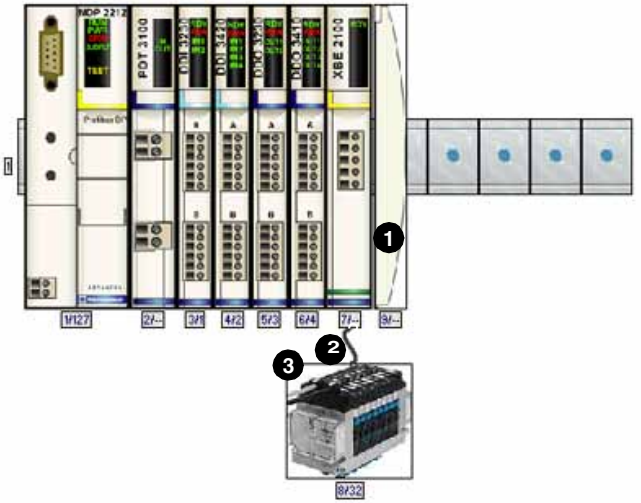
Note: There is no graphical element in the software to indicate termination on a preferred module. You must provide this termination on the physical module.

Extending the Configuration to Standard CANopen Devices

Procedure

An Advantys STB Island does not auto-address standard CANopen devices. If your application includes standard CANopen devices, they must be installed as the last devices on the Island. You must set their Island addresses manually on the devices. Install all your auto-addressable modules (Advantys I/O and preferred modules) first.

Proceed as folows to extend the configuration from a rail to standard CANopen devices:

Step	Action
1a	If there is a terminator plate at the end of the last rail in the Island Editor, pick a CANopen extension module from the Catalog Browser and drop it in front of the termination plate.
1b	If there is not a terminator plate at the end of the last rail, pick an CANopen extension module from the Catalog Browser and drop it in the last position on the rail. Then, pick a termination plate from the catalog browser and drop it after the CANopen extension module.
2	Pick a CANopen device from the Catalog Browser . **Result:** The device appears in the Island Editor below the CANopen extension module and off the rail. An extension cable connects the CANopen extension module and the CANopen device:  **1** CANopen Extension Module **2** Extension Cable **3** CANopen Device

Step	Action
3	If you want to add another CANopen device, repeat step 2. **Result:** Each additional device is placed to the right of the previous device and is connected by a CANopen extension cable.
4	If you do not want to add more standard CANopen devices to the configuration, apply 120 Ω termination to the CANopen device.

Note: There is no graphical element in the software to indicate termination on a standard CANopen device. You must provide this termination on the physical device.

Adding and Deleting Annotation to an Island

Adding Annotation

Text comments can be placed in the Island Editor with the annotation feature. There are 3 ways to annotate a logical Island:

- clicking the following button on the **Island** toolbar:

- right-clicking a location in the Island Editor, and then selecting **Add Annotation** from the menu
- selecting **Add Annotation** from the **Island** menu

Resizing the Annotation Box

The **Annotation** box can be resized to accommodate any amount of text as follows:

Step	Action
1	Select the **Annotation** box. **Result:** When it is selected, handles appear on the corners and sides of the box.
2	Position the mouse cursor over a handle until the cursor changes to the following icon: ↖↘
3	Drag the handle until you achieve the desired size.

Moving the Annotation Box

An **Annotation** box can be moved anywhere within the Island Editor as follows.

Step	Action
1	Resize the **Annotation** box slightly, as described above. (The color of the handles on the box should be green.)
2	Drag the selected box to the desired location in the Island Editor.

Deleting Text from an Annotation Box

Delete text from an **Annotation** box as follows:

Step	Action
1	Click the **Annotation** box.
2	Press ENTER.

Retrieving Text for an Annotation Box

You can retrieve text that has just been deleted from an **Annotation** box as follows:

Step	Action
1	Click the empty **Annotation** box.
2	Click the following button: 

Deleting an Annotation Box

You can delete an annotation box along and its contents as follows:

Step	Action
1	Select the **Annotation** box.
2	On the **Island** menu, click **Delete Annotation**.

Offline Protection

Overview

Whenever you open an existing Island (*.isl*) file, it comes up locked. When a file is locked, you can monitor it on the Workspace screen, but you cannot edit it. Editing is possible only when the file is unlocked. Optionally, you can apply password protection to the offline lock. If you apply a password, you will not be able to unlock the file without first entering the password.

Applying a Password to the Lock

To apply a password to the lock on a new *.isl* file, perform the following steps:

Step	Action
1	While the new *.isl* file is active in the Workspace, click the following icon:  **Result:** A message is displayed asking you if you want to set a password.
2	Click **Yes**.
3	Type a password, and then retype it to confirm. **Note:** The password must be an alphanumeric string between 1 and 32 characters long. An empty password is not valid.
4	Click **OK**. **Result:** A message is displayed prompting you to save the file with the new password.
5	Click **OK**.

Changing the Lock Password

To change the password on the lock, perform the following steps:

Step	Action
1	While the new *.isl* file is active in the Workspace, click the following icon:  **Result:** A message appears asking you if you want to change the password.
2	Click **Yes**.
3	Enter the old password, and then the new one, and then confirm the new password.
4	Click **OK**. **Result:** A message is displayed prompting you to save the file with the new password.
5	Click **OK**.

Unlocking

After a password has been applied to a *.isl* file, you need to know the password to unlock and edit the file when you reopen it. To unlock a password protected *.isl* file:

Step	Action
1	While the *.isl* file is active in the Workspace, click the following icon: 
2	Enter the password.
3	Click **OK**.

Online Protection

Overview

An online protection capability is available to prevent unauthorized changes or overwrites to the configuration data in the physical Island. When online protection is enabled, the RST button on the NIM is disabled and data on the removable memory card is ignored.

You will be asked to apply a password to the online protection. When a password is applied, a user needs to know the password in order to remove the protection feature or get into (or out of) temporary test mode.

Note: Be sure to record the password. If you forget the password, you cannot use the RST button to reset the default configuration parameters or the removable memory card to load a new configuration. Also, you cannot change modes on the physical Island (test mode/run mode) without the password while online protection is enabled.

Online Protection Feature

The protection feature is available only in online mode (when the active *.isl* file in the Advantys configuration software is connected to a physical Island).

To enable online protection for the physical Island, perform the following steps:

Step	Action
1	On the **Online** menu, click **Protect**.
2	Enter a password.
3	Click **OK**.

The **Protect** command enables and disables the feature. When protection is applied, a check mark appears in the box next to the command in the menu.

Password

The password must be an alphanumeric string between 0 and 6 characters long. An empty password is valid.

When protection is activated, you will be queried for a password if you try to execute a command online. If you are not using a password, simply click **OK** when the **Password** dialog box appears.

Unprotecting

To disable online protection, click **Online** → **Protect** again to disable the feature. When online protection is not applied, there is no check mark next to the command on the menu.

Configuration Software Structure

4

Introduction

Overview

This chapter provides a description of the basic user interface functions like navigation and working with menu items. The available menus and all contained items are presented as a reference.

What's in this Chapter?

This chapter contains the following topics:

Topic	Page
Windows Conventions	46
Menus	48
Menu Commands	50
Keyboard Navigation	52
Toolbars	54

Windows Conventions

Overview

There are 3 standard Windows conventions available for moving objects in the Advantys configuration software Workspace:

- drag-and-drop
- dock
- float

Drag-and-Drop

You can drag modules from the Catalog Browser and drop them in the Island Editor. Drag-and-drop a module as follows:

Step	Action	Indication
1	Select a desired module in the Catalog Browser.	-
2	Drag the selected module toward the DIN rail in the Island Editor.	The cursor should look like this: 
3	Drag the module into position on the DIN rail.	The cursor should appear, indicating that the module location is valid:  If the cursor appears, the module location is invalid:  This means there is a violation of the Island's connectivity rules.

Note: Annotation boxes can be moved in the Island Editor also using the drag-and-drop function.

Dock

A standard Windows docking operation allows you to drag a window from its original position in the Workspace to any corner of the application area. Docking can be applied to the Workspace Browser, the Catalog Browser and the toolbars.

Float

A standard Windows float operation allows you to drag the window from its original position in the Workspace to any part of the application area. Floating can be applied to the Workspace Browser, the Catalog Browser and the toolbars.

Menus

Overview

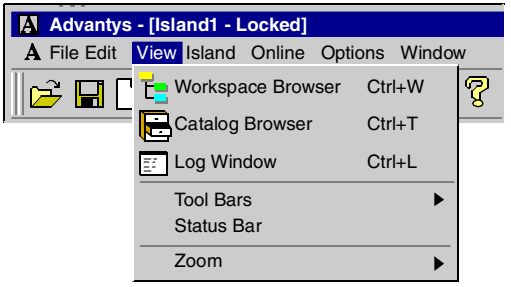
There are 3 types of menus:

- main menus
- submenus
- shortcut or popup menus

Main Menus

The titles of the individual menus are displayed on the menu bar. The individual menu commands are listed on the menus. A menu is opened by left-clicking the title of the menu or by pressing ALT+SELECTED LETTER).

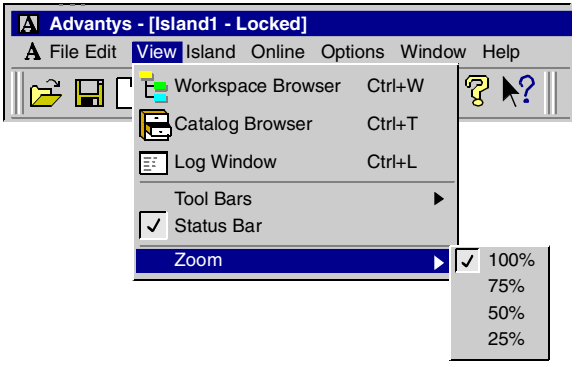
The following figure shows the menu bar with a menu:



Submenus

The title of a submenu is a menu command of the menu above it. The individual submenu commands are listed on the submenu. Menu commands which contain a submenu can be recognized by an arrow icon.

The following figure shows a submenu:



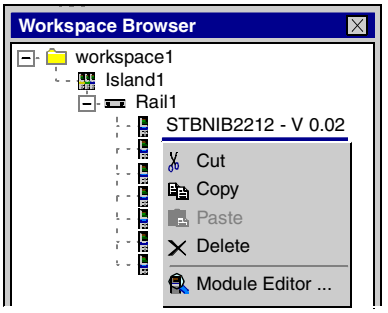
Shortcut or Popup Menus

Shortcut menus are menus which contain menu commands specific to the selected object.

You can open a shortcut menu by clicking the object (right mouse button), selecting the object and confirming with SHIFT+F10, or pressing the context sensitive key.

Shortcut menus can also be invoked if several objects are selected. If this is the case, the menu only contains the menu commands which are valid for all objects.

The following figure shows an object with a shortcut menu:

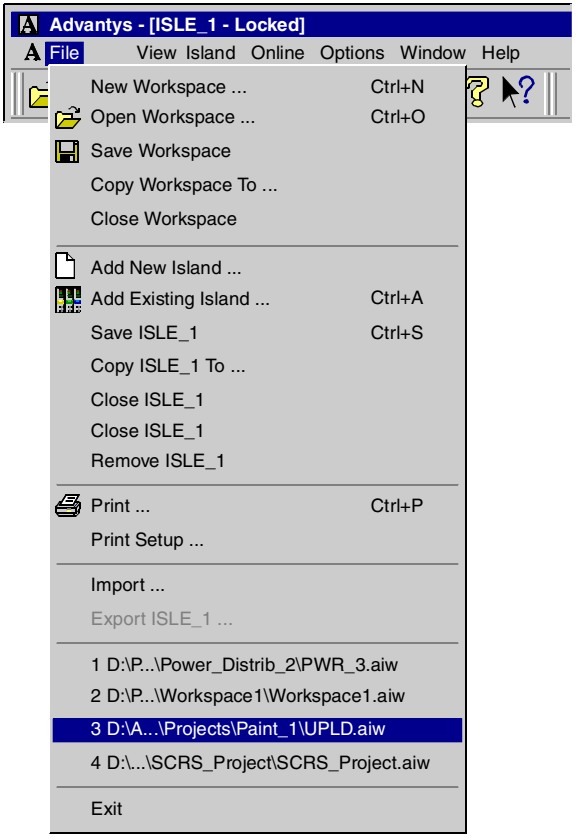


Menu Commands

Introduction

Menu commands are used to execute commands or to call dialog boxes.

The following figure shows an example of a menu with menu commands:



Keyboard Shortcuts or Mnemonics

Keyboard shortcuts (underlined letters) in menu commands allow you to select menu commands using the keyboard. A main menu (menu title) and subsequently a menu command can be selected by holding down Alt and simultaneously entering the underlined letter in the menu title and then the underlined letter of the menu command.

For example, you want to use the **File** menu, **Save Workspace** menu command, you must press ALT+F to open the menu, followed by ALT+V to execute the menu command.

Dimmed Menu Command

If a menu command is not available it is dimmed. One or more other commands may need to be executed before the desired menu command can be executed.

Decimals (...) Left of the Menu Command

On execution of this menu command a dialog box is opened which displays options that must be selected before execution.

Check Mark Right of the Menu Command

The menu command is active. If you select the menu command, the check mark will disappear and the menu command will be disabled. The check mark is usually used to identify active modes (e.g. Island is protected etc.).

Shortcut Keys

Shortcut keys (e.g. F1) or key combinations (e.g. CTRL+N) can be used for executing the menu commands. You can select the menu command using this shortcut key or a key combination without having to open the menu. For example, you can press CTRL+S to perform the **Save** menu command.

Keyboard Navigation

Overview

The following tables describe the possibility to access certain functions directly with keyboard shortcuts.

Global Valid Key Combinations

The following shortcuts are available throughout the Advantys configuration software:

Function	Key Combination
Open Workspace	CTRL+O
Add existing Island	CTRL+A
Save Island	CTRL+S
Print	CTRL+P
Undo	CTRL+Z
Redo	CTRL+Y
Cut	CTRL+X SHIFT+DEL
Copy	CTRL+C SHIFT+INS
Paste	CTRL+V CTRL+INS
Delete	DEL
Set focus on Workspace Browser	CTRL+W
Set focus on Catalog Browser	CTRL+T
Set focus on Log Window	CTRL+L
Delete Annotation	CTRL+D
Help	F1
What's This?	SHIFT+F1
Change between windows of the Advantys configuration software, for instance from the Island Editor to the Catalog Browser	CTRL+F6 SHIFT+F6
Open the context menu	SHIFT+F10 right mouse key application key

Key Combinations Inside the Browsers

The following shortcuts are available in the Workspace Browser and Catalog Browser:

Function	Key Combination
Expand/reduce the object trees	SPACEBAR
Move down in the object tree and expand collapsed elements	RIGHT ARROW
Move up in the object tree and collapse expanded elements	LEFT ARROW
Move up/down in the object tree	UP/DOWN ARROW

Key Combinations Inside the Island Editor

The following shortcuts are available in the Island Editor:

Function	Key Combination
Change between windows of different Islands	CTRL+TAB CTRL+F6
Set focus on the next module on the right	RIGHT ARROW
Set focus on the previous module on the left	LEFT ARROW
Change the status of a selected annotation box	ESC
Select next object (segment, NIM, annotation) in the Island Editor	TAB
Start the Module Editor	RETURN
Go to the next avialable segment	TAB
Go to the previous segment	SHIFT+TAB
Go to the first module in the segment	HOME
Go to the last module in the segment	END

Toolbars

Introduction

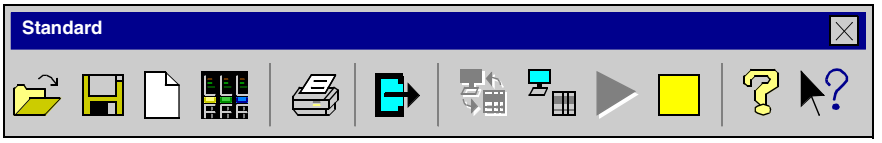
toolbars display a collection of easy-to-use button images and/or menus that initiate different operations in the Advantys configuration software. Several icons are docked in form of independent toolbars on top of the screen.

The Advantys configuration software provides 4 toolbars:

- *Standard, p. 55*
- *Edit, p. 56*
- *View, p. 57*
- *Island, p. 58*

Standard

The **Standard** toolbar comprises 11 icon buttons:



You can move, dock, and/or float this toolbar to other locations in the Workspace. You may also hide the toolbar by right-clicking it and clearing the **Standard** option.

The **Standard** icon buttons perform the following tasks:

Icon	Task
	invokes a dialog box where you can open an existing Workspace
	invokes a dialog box where you can save the currently open Workspace and/or Islands
	invokes a dialog box where you can create a new Island in the open Workspace
	invokes a dialog box where you can add an existing Island to the open Workspace
	invokes a dialog box where you can select any of the items to be printed
	invokes a dialog box where you can select the format and file for the export
	invokes a dialog box where you can connect the software to the physical Island
	disconnects the software from the physical Island
	in online mode: invokes a dialog box where you can put the physical Island in run mode
	in online mode: invokes a dialog box where you can stop the physical Island
	invokes a table of contents for the Advantys help system
	turns the cursor into a question mark so that you can invoke **What's This?** help on a selected item in the Workspace

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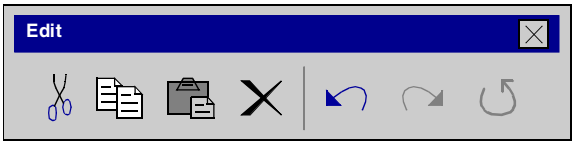
Edit

The **Edit** toolbar comprises 7 icon buttons:



You can move, dock, and/or float this toolbar to other locations in the Workspace. You may also hide the toolbar by right-clicking it and clearing the **Edit** option.

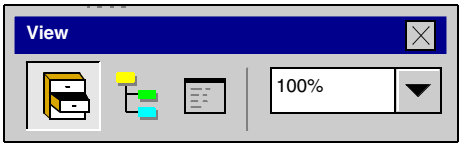
The **Edit** icon buttons perform the following tasks:

Icon	Task
	cuts the selected item
	copies the selected item
	pastes the copied item
	deletes the selected item
	undoes the previous action
	redoes the previous **Undo**
	reverts to the previous saved state

Back to top (see *Introduction, p. 54*)

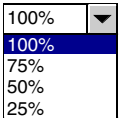
View

The **View** toolbar comprises 3 icon buttons and a drop-down window:



You can move, dock, and/or float this toolbar to other locations in the Workspace. You may also hide the toolbar by right-clicking it and clearing the **View** option.

The **View** icon buttons perform the following tasks:

Icon	Task
	hides or shows the Catalog Browser
	hides or shows the Workspace Browser
	hides or shows the Log Window
	zooms the size of the Island Editor to 25%, 50%, 75% or 100% of the default view

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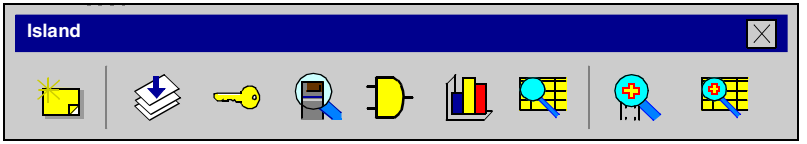
Island

The **Island** toolbar comprises 9 icon buttons:



You can move, dock, and/or float this toolbar to other locations in the Workspace. You may also hide the toolbar by right-clicking it and clearing the **Island** option.

The **Island** icon buttons perform the following tasks:

Icon	Task
	places an empty text window in the Island Editor where you can add an annotation
	initiates the build process for the selected island configuration All edits to the configuration must be saved before the build process can start.
	locks or unlocks the selected island configuration and also gives you a sequence of prompts that enables you to assign or change a password
	opens the Module Editor for a selected I/O in the Island Editor
	opens the Reflex Editor
	displays the **Resource Analysis** screen
	opens the **I/O Image Overview** screen
	in online mode: opens the **Module Diagnostics** screen for a selected I/O in the Island Editor
	in online mode: opens the **I/O Image Animation** screen

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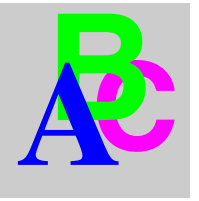

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